

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Boku et al., (JP 2001-241693 A). Boku et al., disclose a humidity control system including an adsorber for controlling humidity of air to be processed using an adsorbent. 32/42 and a refrigerant circuit 20 for operating on a refrigeration cycle and thermally regenerates the adsorber at moisture desorption section 33/45 with heat of refrigerant in the refrigerant circuit 20; wherein the adsorber (absorbing capacity) is formed by adsorption heat exchangers (30) connected to the refrigerant circuit ((20) and having an adsorbent carried on their surfaces (22, 33)/(42, 45) and the humidity control system is configured so that the sensible heat zone of the refrigerant is larger than that for R22 when compared in terms of refrigerant cycle having substantially the same discharge temperature being a functional recitation for the behaving function of some refrigerant. The CO₂ being one of a refrigerant inherently shows the claimed behavior of sensible heat zone (R) for CO₂ refrigerant is larger than for R22 when compared in terms of refrigeration cycle. Therefore, Boku et al., having CO₂ refrigerant meet the claimed invention. See Fig.1-7 and the enclosed translation. Regarding claim 2, 6 and 10, as Boku et al., disclose CO₂ refrigerant, CO₂ refrigerant circuit inherently shows that the pressure of the refrigerant in the high oressure side of the refrigeration cycle is higher

than the critical pressure of the refrigerant. Regarding claims 3, 7 and 11, the single refrigerant of R32 or mixed refrigerant containing R32 in the range from 75 weight % inclusive to 100 weight % exclusive, Bku et al's humidity control system is using CO₂ refrigerant and also capable of using any type of refrigerant including the single refrigerant or a mixed refrigerant as disclosed in claims 3, 7 and 11; regarding claim 5, Boku et al., disclose first the adsorber is composed of a first adsorption element (32 In Fig. 5)/(42 in Fig. 4 which) absorbs moisture in a first air (RA) and second adsorption element (33 in Fig. 5)/(45 in Fig. 4) which is generated by heating with a second air ((OA) heated by the refrigerant element with radiator (22) in a first behavior and a second behavior which second adsorption element (33 in Fig.5) adsorbs moisture in the first air (RA) and the first adsorption element (32 In Fig.5) is regenerated by heating with the second air (OA) heated up by the refrigerant by alternately switching between the first and second behaviou as the gas conditioning device (30 in Fig.5) is taking reverse position by rotation in its own axis and similar is the case for Fig. 4 by reversing the refrigerant flow direction as may be case of a heat pump refrigerant system or by changing the position of (42) and (45) similar to Fig. 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boku et., al. R32 refrigerant being a well known in the art is an obvious implementation in place of CO₂ refrigerant.

Response to Arguments

Applicant's arguments with respect to claims 1-4 have been considered but are moot in view of the new ground(s) of rejection as explained above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad M. Ali whose telephone number is 571-272-4806. The examiner can normally be reached on maxiflex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl J. Tyler can be reached on 571-272-4808. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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